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Rhizoctonia Leaf Spot of *Rhaphiolepis*[1]

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INTRODUCTION: The genus ***Rhaphiolepis*** (Rosaceae) consists of 15 species of evergreen shrubs or small trees of China and Japan (Everett 1982; Huxley 1992). ***Rhaphiolepis umbellata*** (Thunb.) Mak., widely used in Florida landscaping as a slow growing, spineless shrub, is particularly valued for its fragrant flowers which are reminiscent of apple blossoms. Because ***R. umbellata*** tends to respond unfavorably to root disturbance, it is best to set out specimens from cans or pots (Everett 1982; Huxley 1992). A sample of ***R. umbellata*** with leaf spots (Fig. 1) was submitted to the Plant Pathology Section in August 1990 for diagnosis.

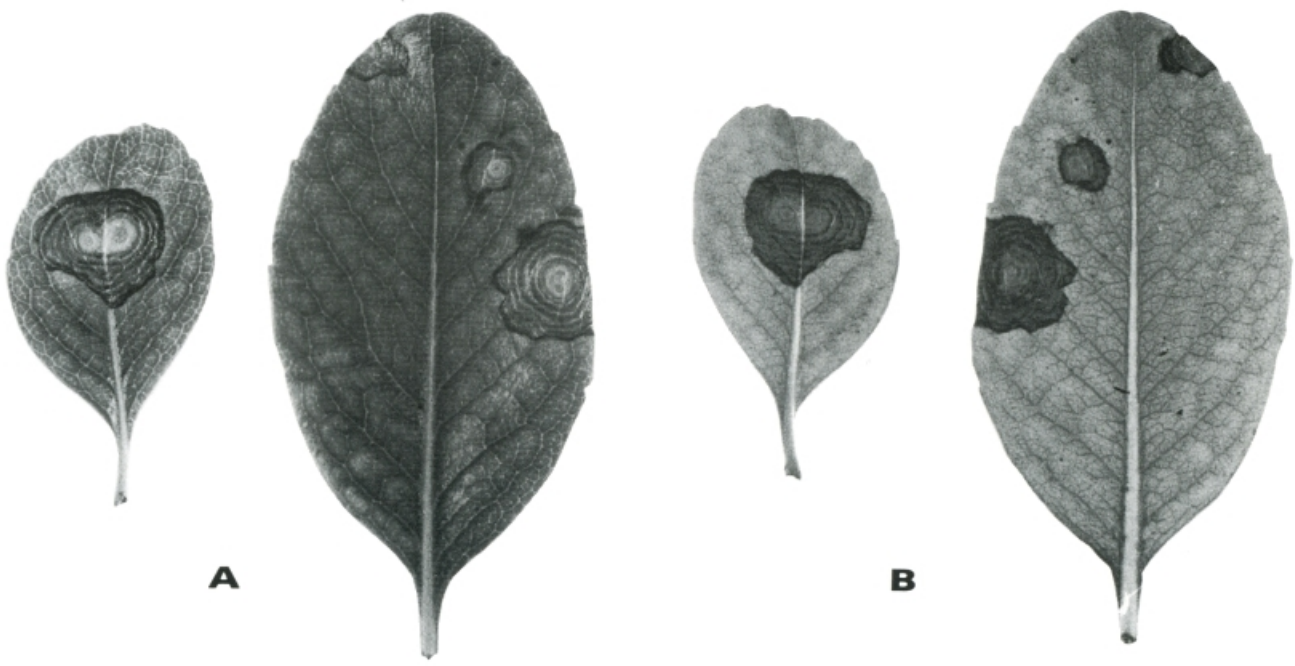

Fig. 1. Leaf spots on upper (A) and lower (B) surfaces of ***Rhaphiolepis umbellata*** caused by ***Rhizoctonia solani***. ***X*** 1.2. Photography credit: Jeffrey W. Lutz (DPI #90075).

CAUSAL AGENT: The fungus ***Rhizoctonia solani*** Kuhn was consistently isolated from the leaf spots. This pathogen is common on a wide range of host plants (Alfieri ***et al.*** 1994; Farr ***et al.*** 1989). This ***Rhizoctonia*** belongs to anastomosis group 4 (AG4) (John Washington, personal communication).

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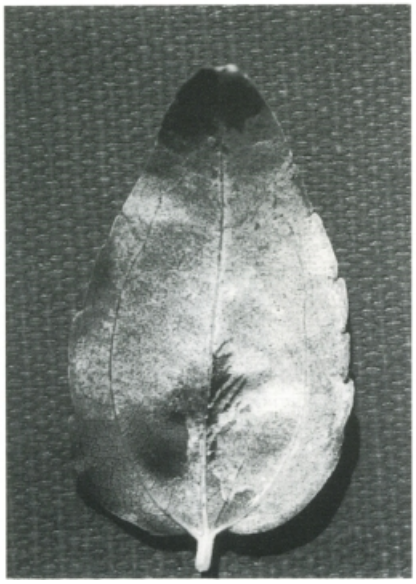
SYMPTOMS: The leaf spots are tan with alternating light and dark concentric rings with somewhat darker perimeter; circular to subcircular; and up to 22 mm across or more. Spots may coalesce to form larger areas. Spots are not vein delimited.

INOCULUM SOURCES IN RHIZOCTONIA: For many years, we have thought Rhizoctonia isolates spread and initiate new infections predominantly by way of mycelial fragments and, in some cases, by sclerotia. Until the late 1980s, most of the disease syndromes observed on samples were consistent with this assessment, i.e., the disease appeared to commence at the ground line where mycelial fragments and sclerotia would reside. If aerial plant parts were infected, there were obvious connections to the soilborne inoculum in the form of splashed soil and debris, or a continuous webbing of mycelium ascending from the soil level could be identified.

A relatively new syndrome of foliar Rhizoctonia diseases emerged in the late 1980s. On broad-leaved plants the syndrome is characterized by individual target spots or zonate lesions. Accompanying some of these aerial target spot Rhizoctonia diseases is a thin grayish or tannish-white hymenial layer consisting of mycelium, basidia, and basidiospores of the teleomorph, *Thanatephorus cucumeris* (Frank) Donk (Fig. 2). This basidial hymenium develops epiphytically on uninfected tissue, and forms only during warm, humid conditions in protected areas of the supporting plant tissue. The hymenial layer is rather ephemeral, and probably dries down and weathers away within several days to weeks after spore release.

Flg. 2. Light-colored superficial hymenial layer (mycelium, basidia, and basidiospores) of *Thanatephorus cucumeris* on the lower leaf surface of Zizyphus *jujuba* Mill. X 2.



The Rhizoctonia leaf spot on ornamental plants in Florida is remarkably similar to the target spot disease of tobacco which appeared initially in North Carolina in 1984 (Shew and Melton 1995), and now is found throughout the tobacco-producing regions of the US. However, the target spot isolate affecting tobacco is characterized as AG3 and is apparently restricted in host range to the Solanaceae.

CONTROL: Thiophanate methyl compounds such as DOMAIN, CLEARY 3336, FUNGO, or SYSTEC 1998 may be used for control (Simone *et al.* 1994-95).

SURVEY AND DETECTION: Look for tan, circular to subcircular leaf spots with alternating light and dark concentric rings and a somewhat darker perimeter.

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